WHAT IS CLAIMED IS:

1.   A method for simulating signals in a simulated system with a digital apparatus, said system being simulated comprising of subsystems and connections between said subsystems, said signals being referred to said connections, said method being characterized in that at least one of said signals being represented by a sum of at least two carriers, each being modulated by a bandpass signal, wherein at least two of said bandpass signals having a different bandwidth.

2.   The method recited in 1, wherein said system being an essentially electrical system.

3.   The method recited in 1, wherein said method further being characterized in that at least two of said signals being represented by a sum of at least two carriers, each being modulated by a bandpass signal, wherein at least two of said signals having a representation being different from signal to signal in either at least one carrier frequency or in at least one bandwidth for a carrier frequency common for said two signals.

4.   The method recited in 1, further comprising the step of replacing at least one signal representation with at least two carriers and their bandpass signals by one substitute carrier and one substitute bandpass signal when the distance between said bandpass signals is smaller than a threshold value.

5.   The method recited in 1, comprising the step of constructing a computational graph, wherein each of said subsystems is represented by at least one computation node and each computation node having a computation rule and a step of scheduling the execution of said computation rules for each computation node such that for a maximum amount of computation nodes at least a sequence of computations can be performed without interruptions.

6.   The method recited in 1, wherein said system comprises of at least one linear subsystem and the method further comprising the step of constructing a computational graph, wherein each of said subsystems are represented by at least one computation node and wherein for at least said linear subsystem a plurality of computation nodes are provided, each computation node being related to a selection of the carriers in said linear subsystems input signals.
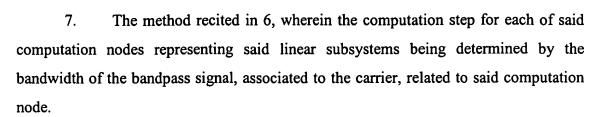
-36-

7.   The method recited in 6, wherein the computation step for each of said computation nodes representing said linear subsystems being determined by the bandwidth of the bandpass signal, associated to the carrier, related to said computation node.

8.   The method recited in 1 being characterized in that said signals are simulated by executing of a plurality of computation rules, each computation rule being specific for each subsystem.

9.   The method recited in 1, wherein said system comprises of at least one nonlinear subsystem and the method further comprising the steps of selecting for said nonlinear subsystem a computation method based on combining of bandpass signals when the number of carriers in said nonlinear subsystems input signals is below a threshold value and a computation method based on Fourier transformation otherwise.

10.   The method recited in 1, wherein the method comprising the steps of constructing a computational graph, wherein each of said subsystems is represented by at least one computation node and said connections by edges between said computation nodes and adding of down- or upsampling nodes between at least two connected nodes having a different computation step.

11.   A digital apparatus for simulating signals of a simulated system, said system being simulated comprising subsystems and connections between said subsystems, said signals being referred to said connections, said apparatus comprising:

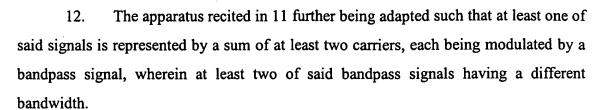means for entering a representation of said system;

means for transforming said representation into a computational graph, said computation graph comprising at least of computation nodes, each computation node having a computation rule;

a scheduler for scheduling the execution of said computation rules of said computation nodes in time, said scheduler being adapted for scheduling the execution of said computation rule for each computation node such that for a maximum amount of computation nodes at least a sequence of computations can be performed without interruptions;

means for execution said computation rules in the order determined by said scheduler.

12. The apparatus recited in 11 further being adapted such that at least one of said signals is represented by a sum of at least two carriers, each being modulated by a bandpass signal, wherein at least two of said bandpass signals having a different bandwidth.

13. The apparatus recited in 11 further being adapted such that at least two of said signals are represented by a sum of at least two carriers, each being modulated by a bandpass signal, wherein at least two of said signals having a representation being different from signal to signal in either at least one carrier frequency or in at least one bandwidth for a carrier frequency common for said two signals.